

IN THE CLAIMS

Please amend claims 1 thru 6 and 8 thru 12 as follows:

1 1. (Currently Amended) A key signal scanning apparatus of a complex telephone
2 operated by using external power and by using a loop voltage when the external power is
3 not supplied, said apparatus comprising:

4 a keypad having row ports, column ports, and keys for outputting a key signal in
5 accordance with pressing of a key by a user;

6 a main microprocessor having row output ports and column input ports, and which
7 operates by the external power for supplying a timing signal to the row ports of the
8 keypad by using the row output ports, said main microprocessor receiving the key signal
9 from the column ports of the keypad by using the column input ports, detecting the key
10 pressed by the user by scanning the received key signal, and outputting a first dialing
11 signal corresponding to the detected key;

12 a sub microprocessor which operates when the external power is not supplied for
13 outputting a second dialing signal according to the key signal from the keypad, the sub
14 microprocessor having row ports and column ports;

15 a ~~first separator circuit~~ diodes for cutting off current flow to the row output ports
16 of the main microprocessor from the row ports of the sub microprocessor; and

17 a ~~second separator circuit~~ bipolar transistors for cutting off current flow to the
18 column ports of the sub microprocessor from the column input ports of the main

19 microprocessor when the external power is not supplied.

1 2. (Currently Amended) The key signal scanning apparatus of claim 1, further
2 comprising a ~~third~~ sub separator circuit for cutting off current flow to the column ports of
3 the sub microprocessor from the column ports of the keypad when the external power is
4 supplied.

1 3. (Currently Amended) The key signal scanning apparatus of claim 2, wherein
2 the ~~third~~ sub separator circuit comprises resistance elements connected to each column
3 port of the keypad and to each column port of the sub microprocessor.

1 4. (Currently Amended) The key signal scanning circuit of claim 2, wherein the
2 ~~second separator circuit has an output bipolar transistors have outputs~~ connected to the
3 column input ports of the main microprocessor, and ~~an input inputs~~ connected to both the
4 column ports of the keypad and a first side of the ~~third~~ sub separator circuit, a second side
5 of the ~~third~~ sub separator circuit being connected to the column ports of the sub
6 microprocessor.

1 5. (Currently Amended) The key signal scanning circuit of claim 1, wherein the
2 ~~first separator circuit comprises diode elements having diodes have~~ anode terminals
3 connected to respective row output ports of the main microprocessor, and ~~having have~~

4 cathode terminals connected to respective row ports of the keypad.

1 6. (Currently Amended) The key signal scanning apparatus of claim 1, wherein
2 the ~~second separator circuit comprises~~ bipolar ~~transistor elements having~~ transistors have
3 emitter terminals connected to respective column input ports of the main microprocessor,
4 and ~~having~~ have collector terminals connected to respective column ports of the keypad.

Claim 7. (Canceled)

1 8. (Currently Amended) The key signal scanning apparatus of claim 1,
2 wherein the ~~first separator circuit has an input~~ diodes have inputs connected
3 to the row output ports of the main microprocessor, and ~~an output~~ outputs
4 connected to both the row ports of the sub microprocessor and the row ports
5 of the keypad.

1 9. (Currently Amended) A key signal scanning apparatus of a complex telephone
2 operated by using external power and by using a loop voltage when the external power is
3 not supplied, said apparatus comprising:

4 a keypad having row ports, column ports, and keys for outputting a key signal in
5 accordance with pressing of a key by a user;

6 a main microprocessor having row output ports and column input ports, and which

7 operates by the external power for supplying a timing signal to the row ports of the
8 keypad by using the row output ports, said main microprocessor receiving the key signal
9 from the column ports of the keypad by using the column input ports, detecting the key
10 pressed by the user by scanning the received key signal, and outputting a first dialing
11 signal corresponding to the scanned key;

12 a sub microprocessor which operates when the external power is not supplied for
13 outputting a second dialing signal according to the key signal from the keypad, the sub
14 microprocessor having row ports and column ports;

15 ~~a first separator circuit~~ bipolar transistors for cutting off current flow to the
16 column ports of the sub microprocessor from the column input ports of the main
17 microprocessor when the external power is not supplied; and

18 ~~a second separator circuit~~ resistances for cutting off current flow to the column
19 ports of the sub microprocessor from the column ports of the keypad when the external
20 power is supplied.

1 10. (Currently Amended) The key signal scanning apparatus of claim 9, wherein
2 the ~~second separator circuit comprises resistance elements~~ resistances are connected to
3 [[each]] column [[port]] ports of the keypad and to [[each]] column [[port]] ports of the
4 sub microprocessor.

1 11. (Currently Amended) The key signal scanning apparatus of claim 9, wherein

2 the ~~first separator circuit has an output~~ bipolar transistors have outputs connected to the
3 column input ports of the main microprocessor, and ~~an input~~ inputs connected to both the
4 column ports of the keypad and [[a]] ~~to~~ first [[side]] sides of the ~~second separator circuit~~
5 resistances, [[a]] second [[side]] sides of the ~~second separator circuit~~ resistances being
6 connected to the column ports of the sub microprocessor.

1 12. (Currently Amended) The key signal scanning apparatus of claim 9, wherein
2 the ~~first separator circuit comprises~~ bipolar transistor elements having transistors have
3 emitter terminals connected to respective column input ports of the main microprocessor,
4 and ~~having~~ have collector terminals connected to respective column ports of the keypad.

Claim 13. (Canceled)